Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) An evaporator for a heat transfer system, the evaporator comprising:

a heated wall;

a liquid barrier wall containing working fluid on an inner side of the liquid barrier wall, which fluid flows only along the inner side of the liquid barrier wall;

a primary wick positioned between the heated wall and the inner side of the liquid barrier wall;

a vapor removal channel that is located at an interface between the primary wick and the heated wall;

a liquid flow channel located between the liquid barrier wall and the primary wick; and

a secondary wick between the ~~vapor removal channel~~ liquid flow channel and the primary wick.

2. (Original) The evaporator of claim 1 further comprising additional vapor removal channels located at the interface between the primary wick and the heated wall.

3. (Original) The evaporator of claim 1 further comprising additional liquid flow channels located between the liquid barrier wall and the primary wick.

4. (Canceled)

5. (Original) The evaporator of claim 1 wherein the primary wick has a thermal conductivity that is low enough to reduce leakage of heat from the heated wall, through the primary wick, toward the liquid barrier wall.

6. (Original) The evaporator of claim 1 wherein the heated wall is defined so as to accommodate the vapor removal channel.

7. (Original) The evaporator of claim 6 wherein the vapor removal channel is electro-etched into the heated wall.

8. (Original) The evaporator of claim 6 wherein the vapor removal channel is machined into the heated wall.

9. (Original) The evaporator of claim 1 wherein the interface at the primary wick is defined so as to accommodate the vapor removal channel.

10. (Original) The evaporator of claim 9 wherein the vapor removal channel is electro-etched into the heated wall.

11. (Original) The evaporator of claim 9 wherein the vapor removal channel is machined into the heated wall.

12. (Original) The evaporator of claim 9 wherein the vapor removal channel is embedded within the primary wick at the interface.

13. (Original) The evaporator of claim 1 wherein a cross section of the vapor removal channel is sufficient to ensure vapor flow generated at the interface between the primary wick and the heated wall without a significant pressure drop.

14. (Original) The evaporator of claim 1 wherein the surface contact between the heated wall and the primary wick is selected to provide better heat transfer from a heat source at the heated wall into the vapor removal channel.

15. (Original) The evaporator of claim 1 wherein a thickness of the heated wall is selected to ensure sufficient vaporization at the interface between the primary wick and the heated wall.

16. (Original) The evaporator of claim 1 wherein the liquid flow channel supplies the primary wick with liquid from a liquid inlet.

17. (Original) The evaporator of claim 16 wherein the liquid flow channel is configured to supply the primary wick with enough liquid to offset liquid vaporized at the interface between the primary wick and the heated wall and liquid vaporized at the liquid barrier wall.

18. (Original) The evaporator of claim 1 further comprising:

additional vapor removal channels located at the interface between the primary wick and the heated wall; and

additional liquid flow channels located between the liquid barrier wall and the primary wick;

wherein the number of vapor removal channels is higher than the number of liquid flow channels.

19. (Previously Presented) The evaporator of claim 1 further comprising a vapor vent channel at an interface between the secondary wick and the primary wick.

20. (Previously Presented) The evaporator of claim 19 wherein vapor bubbles formed within the vapor vent channel are swept through the secondary wick and through the liquid flow channel.

21. (Original) The evaporator of claim 19 wherein the vapor vent channel delivers vapor that has vaporized within the primary wick near the liquid barrier wall away from the primary wick.

22. (Previously Presented) The evaporator of claim 1 wherein the secondary wick is a mesh screen.

23. (Previously Presented) The evaporator of claim 1 wherein the secondary wick is a slab wick.

24. (Original) The evaporator of claim 1 wherein the heated wall and the liquid barrier wall are capable of withstanding internal pressure of the working fluid.

25. (Original) The evaporator of claim 1 wherein the primary wick, the heated wall, and the liquid barrier wall are annular and coaxial such that the heated wall is inside the primary wick, which is inside the liquid barrier wall.

26. (Original) The evaporator of claim 1 wherein the vapor removal channel is thermally segregated from the liquid flow channel.

27. (Original) The evaporator of claim 1 wherein the liquid barrier wall is equipped with fins that cool a liquid side of the evaporator.

28. (Original) The evaporator of claim 1 wherein the liquid barrier wall is cooled by passing liquid across an outer surface of the liquid barrier wall.

29. (Currently Amended) A heat transfer system comprising:

an evaporator including:

a heated wall;

a liquid barrier wall containing working fluid on an inner side of the liquid barrier wall, which fluid flows only along the inner side of the liquid barrier wall;

a primary wick positioned between the heated wall and the inner side of the liquid barrier wall;

a vapor removal channel that is located at an interface between the primary wick and the heated wall, the vapor removal channel extending to a vapor outlet;

a liquid flow channel located between the liquid barrier wall and the primary wick, the liquid flow channel receiving liquid from a liquid inlet; and

a secondary wick between the ~~vapor removal channel~~ liquid flow channel and the primary wick;

a condenser having a vapor inlet and a liquid outlet;

a vapor line providing fluid communication between the vapor outlet and the vapor inlet; and

a liquid return line providing fluid communication between the liquid outlet and the liquid inlet.

30. (Original) The heat transfer system of claim 29 wherein the liquid barrier wall of the evaporator is equipped with heat exchange fins.

31. (Original) The heat transfer system of claim 29 further comprising a reservoir in the liquid return line.

32. (Previously Presented) The heat transfer system of claim 31 wherein the evaporator comprises a vapor vent channel at an interface between the secondary wick and the primary wick.

33. (Original) The heat transfer system of claim 32 wherein vapor bubbles formed within the vapor vent channel are swept through the secondary wick, through the liquid flow channel, and into the reservoir.

34. (Original) The heat transfer system of claim 32 wherein the vapor vent channel delivers vapor that has vaporized within the primary wick near the liquid barrier wall away from the primary wick and into the reservoir.

35. (Original) The heat transfer system of claim 31 wherein vapor bubbles are vented into the reservoir from the evaporator.

36. (Original) The heat transfer system of claim 31 wherein the reservoir is cold biased.

37. (Original) The heat transfer system of claim 29 wherein the evaporator is planar.

38. (Original) The heat transfer system of claim 29 wherein the evaporator is annular such that the heated wall is inside the primary wick, which is inside the liquid barrier wall.

39. (Original) The heat transfer system of claim 29 wherein liquid returning into the evaporator from the condenser is subcooled by the condenser.

40. (Original) The heat transfer system of claim 39 wherein an amount of subcooling produced by the condenser balances heat leakage through the primary wick.

41. (Original) The heat transfer system of claim 39 further comprising a reservoir in the liquid return line.

42. (Original) The heat transfer system of claim 41 wherein subcooling maintains a thermal balance within the reservoir.

43. (Original) The heat transfer system of claim 41 wherein the liquid return line enters the evaporator through the reservoir.

44. (Original) The heat transfer system of claim 41 wherein the reservoir is formed adjacent the liquid barrier wall of the evaporator.

45. (Original) The heat transfer system of claim 41 wherein the reservoir is formed between the liquid barrier wall and the primary wick of the evaporator.

46. (Original) The heat transfer system of claim 41 wherein the reservoir is formed as a separate vessel that communicates with the liquid inlet of the evaporator.

47. (Original) The heat transfer system of claim 41 wherein the reservoir is equipped with fins that cool the reservoir.

48. (Original) The heat transfer system of claim 41 wherein a temperature difference between the reservoir and the primary wick near the heated wall ensures circulation of the working fluid through the heat transfer system.

49. (Original) The heat transfer system of claim 29 wherein the heated wall contacts a hot side of a Stirling cooling machine.

50. (Original) The heat transfer system of claim 29 wherein the liquid flow channel is fed with liquid from a reservoir located above the primary wick.

51. (Original) The heat transfer system of claim 50 wherein the liquid barrier wall is cold biased.

52. (Currently Amended) An evaporator for a heat transfer system, the evaporator comprising:

a heated wall having an annular shape;

a liquid barrier wall having an annular shape and being coaxial with the heated wall;

a primary wick positioned between the heated wall and the liquid barrier wall and being coaxial with the heated wall; and

a secondary wick between the ~~heated wall~~ liquid barrier wall and the primary wick.

53. (Previously presented) The evaporator of claim 52 wherein the heated wall is inside the primary wick, which is inside the liquid barrier wall.

54. (Previously presented) The evaporator of claim 52 further comprising a subcooler adjacent the liquid barrier wall.

55. (Previously presented) The evaporator of claim 52 further comprising a vapor removal channel located at an interface between the primary wick and the heated wall.

56. (Previously presented) The evaporator of claim 52 further comprising a liquid flow channel located between the liquid barrier wall and the primary wick.

57. (Previously presented) The evaporator of claim 56 wherein the liquid flow channel supplies the primary wick with liquid from a liquid inlet.

58. (Previously presented) The evaporator of claim 52 wherein the primary wick has a thermal conductivity that is low enough to reduce leakage of heat from the heated wall, through the primary wick, toward the liquid barrier wall.

59. (Previously presented) The evaporator of claim 52 wherein the heated wall is defined so as to accommodate a vapor removal channel.

60. (Previously presented) The evaporator of claim 52 wherein an interface between the primary wick and the heated wall accommodates a vapor removal channel.

61. (Previously presented) The evaporator of claim 52 wherein the surface contact between the heated wall and the primary wick is selected to provide better heat transfer from a heat source at the heated wall into a vapor removal channel located between the primary wick and the heated wall.

62. (Previously presented) The evaporator of claim 52 wherein a thickness of the heated wall is selected to ensure sufficient vaporization at an interface between the primary wick and the heated wall.

63. (Previously Presented) The evaporator of claim 52 further comprising a vapor vent channel at an interface between the secondary wick and the primary wick.

64. (Previously presented) The evaporator of claim 52 wherein the heated wall and the liquid barrier wall are capable of withstanding internal pressure of the working fluid.

65. (Previously presented) The evaporator of claim 52 wherein the liquid barrier wall is equipped with fins that cool a liquid side of the evaporator.

66. (Currently Amended) A method of making an evaporator, the method comprising:

orienting a heated wall such that a heat-absorbing surface of the heated wall defines at least a portion of an exterior surface of the evaporator, the exterior surface being configured to receive heat;

orienting a liquid barrier wall adjacent the heated wall, wherein the liquid barrier wall has a surface configured to confine liquid;

positioning a primary wick between the heated wall and the liquid barrier wall;

defining a vapor removal channel at an interface between the primary wick and the heated wall;

defining a liquid flow channel between the liquid barrier wall and the primary wick; and

positioning a secondary wick between the ~~vapor removal channel~~ liquid flow channel and the primary wick~~; and~~

~~defining a liquid flow channel between the liquid barrier wall and the primary wick~~.

67-73. (Canceled)

74. (Currently Amended) A method of making an evaporator, the method comprising:

orienting a liquid barrier wall having an annular shape;

orienting a heated wall having an annular shape inside of and coaxially with the liquid barrier wall;

positioning a primary wick between the liquid barrier wall and the heated wall, the primary wick being coaxial with the liquid barrier wall;

defining a vapor removal channel at an interface between the primary wick and the heated wall; and

positioning a secondary wick between the ~~vapor removal channel~~ liquid barrier wall and the primary wick.

75-76. (Canceled)

77. (Previously Presented) The method of claim 66 further comprising defining a vapor vent channel at an interface between the secondary wick and the primary wick

78. (Previously Presented) The method of claim 74 further comprising defining a vapor vent channel at an interface between the secondary wick and the primary wick.

79. (Previously Presented) A method of transferring heat, the method comprising:

inputting heat energy onto an exterior heat-absorbing surface of a vapor barrier wall;

flowing liquid through a liquid flow channel that is defined between a liquid barrier wall and a primary wick;

pumping the liquid from the liquid flow channel through a primary wick positioned between the liquid barrier wall and the vapor barrier wall;

evaporating at least some of the liquid at a vapor removal channel that is defined at an interface between the primary wick and the vapor barrier wall; and

delivering vapor formed near or within the liquid flow channel away from the primary wick.

80. (Previously Presented) The method of claim 79 wherein delivering vapor formed near or within the liquid flow channel includes delivering the vapor through a vapor vent channel at an interface between a secondary wick and the primary wick.

81. (Previously Presented) The method of claim 80 wherein delivering vapor formed near or within the liquid flow channel includes sweeping vapor bubbles formed within the vapor vent channel through the secondary wick and through the liquid flow channel.

82. (Previously Presented) The method of claim 80 wherein delivering vapor formed near or within the liquid flow channel includes delivering vapor that has vaporized within the primary wick near the liquid barrier wall away from the primary wick.

83. (Previously Presented) The method of claim 79 further comprising reducing leakage of heat from the vapor barrier wall, through the primary wick, toward the liquid barrier wall.

84. (Previously Presented) The method of claim 79 further comprising ensuring vapor flow generated within the vapor removal channel at the interface between the primary wick and the vapor barrier wall without a significant pressure drop.

85. (Previously Presented) The method of claim 79 wherein pumping the liquid through the primary wick includes supplying the primary wick with enough liquid to offset liquid vaporized at the interface between the primary wick and the vapor barrier wall and liquid vaporized at the liquid barrier wall.

86. (Previously Presented) A planar evaporator for a heat transfer system, the evaporator comprising:

a planar heated wall;

a planar liquid barrier wall containing working fluid on an inner side of the liquid barrier wall, which fluid flows only along the inner side of the liquid barrier wall;

a planar primary wick positioned between the heated wall and the inner side of the liquid barrier wall;

a vapor removal channel that is located at an interface between the primary wick and the heated wall; and

a liquid flow channel located between the liquid barrier wall and the primary wick.